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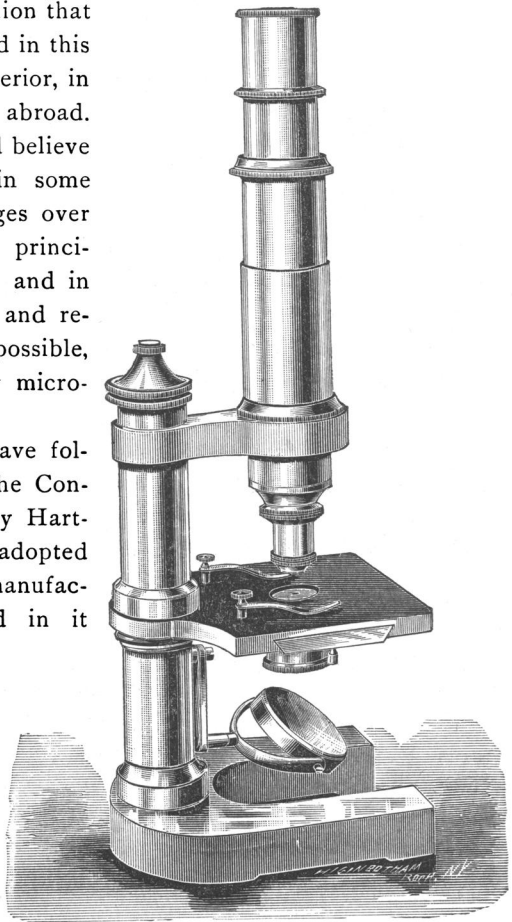
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***A NEW FORM OF MICROSCOPE, MADE BY BAUSCH & LOMB  
OPTICAL CO., ROCHESTER.***

W. A. E. DRESCHER, New York City.

The subject, American and European microscopes, has been considerably discussed. We believe the majority of our American microscopists are of the opinion that the instruments manufactured in this country are equal, if not superior, in many respects to those made abroad. Yet there are others who still believe the old Continental form in some respects to possess advantages over our American instruments, principally in their compactness, and in order to meet their desires and requirements as much as it is possible, we have constructed a new microscope, "The Biological."

In this instrument we have followed the construction of the Continental Model developed by Hartnack, and now generally adopted by some other European manufacturers. We have embodied in it some improvements which have been considered important by prominent microscopists, to whom the first instruments have been submitted for examination. It is made of brass throughout, highly polished and lacquered; the base is of



"The Biological."

larger dimensions than any of the foreign instruments of the same character, therefore, more firm, particularly when the body is inclined. The stage, also, is of considerably larger dimensions, thus allowing the use of Culture slides without the danger of tilting. A groove is provided on its lower surface for the slide with cylinder diaphragms, but this slide may be replaced by another carrying standard size sub-stage, arranged to be centered, provided with our revolving diaphragm. To this may also be fitted any of our regular sub-stage accessories, particularly the series of sub-stage condensers, which is not possible on the other. The main tube is provided with draw tube, sliding in a special sheath, and, when extended, gives a total tube length of 170.0 millimeter. The fine adjustment is by micrometer screw, and works on the triangular bearing of the arm.

We have also constructed a special series of objectives, likewise called "Biological," consisting of a  $\frac{3}{8}$  inch, angular aperture 28 degrees,  $\frac{1}{8}$  inch, angular aperture 116 degrees, and a  $\frac{1}{12}$  inch H. I. numerical aperture 1.25. These objectives are corrected for the 170 millimeter tube length. The medium and high power objective should be used with no other; in case, however, that it is desired to use the standard tube length and the regular objectives which are corrected for this tube length, the tubes may be extended to the standard length by unscrewing the sheath and removing the screw-top. The instrument will be made in two forms, with solid pillar and arm, and the other with joint for inclination.

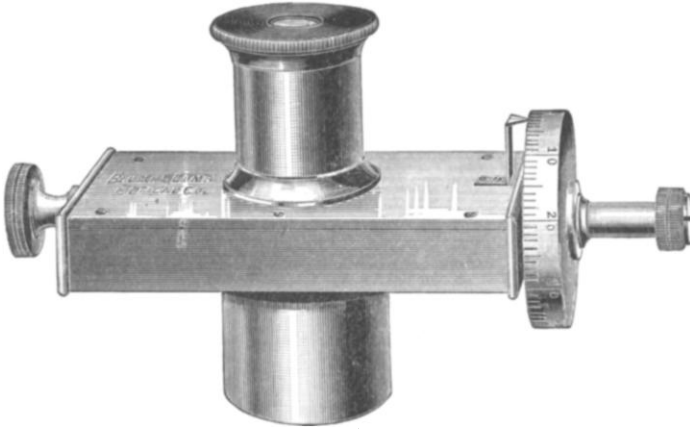
**NEW ACCESSORIES OF THE BAUSCH & LOMB OPTICAL COMPANY.**

*Filar Micrometer.*

Modern microscopical research requires instruments for absolutely accurate measurements, and in constructing the Filar Micrometer presented here, we have followed the suggestions of Prof. M. D. Ewell, a high authority on the subject.

An internal frame is provided with a longitudinal and transverse cross-hair, which is adjustable within a limited range for position by a milled head at one end. The micrometer screw, which is cut according to desire, either to  $\frac{1}{2}$  millimeter, or  $\frac{1}{32}$  inch, is adjustable by graduated disk, and carries the cross-hair across the field. The

graduation is in 100 parts on a silvered ring, and the reading is made from a stationary index. The graduated disk may be revolved on its axis. A comb is in the field, corresponding exactly with the



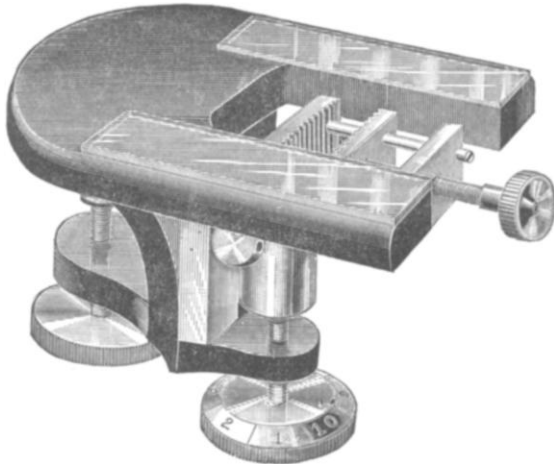
Filar Micrometer.

pitch of the screw, thus enabling the determination of the number of revolutions. A Ramsden eye-piece is used, which is stationary in the optical axis and adjustable for focus.

The apparatus is accurately made and extremely delicate in its operation. It is adjustable to any tube.

*Microtome.*

We have found that the section cutters, formerly made by us and other manufacturers, are in some respects not suited to modern requirements. We have, therefore, ceased to make them, and have replaced them by



Microtome.

new instruments which we shall hereafter class under the head of microtomes.

The instrument presented here is dissimilar from the Laboratory and Student Microtomes of our manufacture in not having mechanical movement for the knife; it is intended to be fastened to the table top by means of thumb-screw. The cutting plate of the instrument is inlaid with glass to obtain perfect smoothness. To the carriage are directly fitted the micrometer screw with graduated disk, and a section clamp which is acted upon by the former. The pitch of the screw is  $\frac{1}{30}$  inch, graduation on disk 10, and the finest degree of feed  $\frac{1}{300}$  inch.

The regular section knives as well as the ordinary razors can be used with the instrument.